WHAT IS CLAIMED IS:

1. A fuel pump for supplying fuel drawn from a fuel tank into an internal combustion engine, the fuel tank comprising:

a rotor;

a rotation shaft, which revolves integrally with the rotor;

bearing members, which support both axial ends of the rotation shaft;

a stator, which is disposed on an outer circumference of the rotor and surrounds the rotor;

a drawing force generative means, which generates drawing force for drawing fuel from the fuel tank by means of rotation force of the rotor, wherein:

the rotor has a recess in a center of its axial end portion; and

at least one of the bearing members is disposed in the recess.

2. A fuel pump according to claim 1, wherein:

the drawing force generative means has a rotation member, which rotates integrally with the rotor, and a case member, which houses the rotation member;

the case member has a projecting portion, which is disposed in the recess, and at least one part of the projecting portion projects toward the recess; and

the projecting portion supports one of the bearing members by an inner periphery of the projecting portion.

3. A fuel pump for supplying fuel drawn from a fuel tank into an internal combustion engine, the fuel tank comprising:

a rotor;

a rotation shaft, which revolves integrally with the rotor;

shaft bearing members, which support both axial ends of the rotation shaft;

a stator, which is disposed on an outer circumference of the rotor and surrounds the rotor; and

a drawing force generative means, which generates drawing force for drawing fuel from the fuel tank by means of rotation force of the rotor, wherein the rotor and the drawing force generative means are disposed to be overlapped in an axial direction of the rotor.

4. A fuel pump according to claim 3, wherein at least one part of the projecting portion is disposed in the recess, and thereby the rotor and the drawing force generative means are disposed to be overlapped in an axial direction of the rotor.

5. A fuel pump according to claim 4, wherein the rotor has a recess in a center of its axial end portion.

6. A fuel pump according to claim 5, wherein the drawing force generative means has a rotation member, which rotates integrally with the rotor, and a case member, which houses the rotation member.

7. A fuel pump according to claim 1, wherein:

the stator has a permanent magnet, which is disposed on its circumference and forms a plurality of magnetic poles the polar characters of which are alternated;

the rotor includes an armature, which is rotatably disposed inside of the stator, and a commutator, which rotates integrally with the armature and has a plurality of segments respectively electrically connected with coils of the armature; and

the armature has a cover, which covers one of axial end portions of the armature, and the recess is formed in the cover.

8. A fuel pump according to claim 3, wherein:

the rotor and the drawing force generative means respectively have stepped portions; and

the rotor and the drawing force generative means are disposed to be overlapped so that the stepped portions oppose each other.

9. A fuel pump according to claim 8, wherein:

the stator has a permanent magnet, which is disposed on its circumference and forms a plurality of magnetic poles the polar characters of which are alternated;

the rotor includes an armature, which is rotatably disposed inside of the armature, and a commutator, which rotates integrally with the armature and has a plurality of segments respectively electrically connected with coils of the armature;

and

the armature has a cover, which covers one of axial end portions of the armature, and the stepped portion is formed in the cover.

10. A fuel pump according to claim 1, wherein:

the stator has a plurality of coils, which are disposed on its circumference; and

the stator has a permanent magnet, which is disposed on its circumference and forms a plurality of magnetic poles the polar characters of which are alternated.

11. A fuel pump according to claim 1, wherein:

the stator has a permanent magnet, which is disposed on its circumference and forms a plurality of magnetic poles the polar characters of which are alternated; and

the rotor includes an armature, which is rotatably disposed inside of the armature, and a commutator, which rotates integrally with the armature and has a plurality of segments respectively electrically connected with coils of the armature.

12. A fuel pump according to claim 1, wherein the armature has a cover, which covers one of axial end portions of the armature.

13. A fuel pump according to claim 1, wherein:

the cover has a connective portion, which is disposed at a bottom of the recess and connected with the rotation shaft,

and a cylindrical portion, which extends from an outer periphery of the connective portion to an opening of the recess along the rotation shaft; and

thickness of the connective portion is thicker than thickness of the cylindrical portion.

14. A fuel pump according to claim 1, wherein:

the armature includes a plurality of bobbins arranged in the circumferential direction of the armature; and

each bobbin is wound with a coil by way of concentrated winding.

15. A fuel pump according to claim 14, wherein the armature includes:

a central core, which is disposed in the rotational center of the armature; and

a plurality of coil cores magnetically connected with the central core, the coil cores being different bodies from the central core and disposed in the outer circumference of the central core to be arranged in the circumferential direction thereof.

16. A fuel pump according to claim 1, wherein a room around each bobbin to be wound with a coil is formed to be a trapezoidal shape that becomes smaller from the outer periphery to the rotational center of the coil core.

17. A fuel pump according to claim 1, wherein the position of the centroid of the rotor is positioned in the substantial center between the bearing members.

18. A fuel pump according to claim 3, wherein the position of the centroid of the rotor is positioned in the substantial center between the bearing members.